OPERATING SUMMARY

MOORE TWP. (CORUNNA)

WATER POLLUTION CONTROL PLANT

1973

Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, SOUTHWESTERN REGION
D. McTavish

MANAGER, UTILITY OPERATIONS
A. Ladbrooke

MOORE TWP. - CORUNNA

WATER POLLUTION CONTROL PLANT

operated for

THE TOWNSHIP OF MOORE

by the

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

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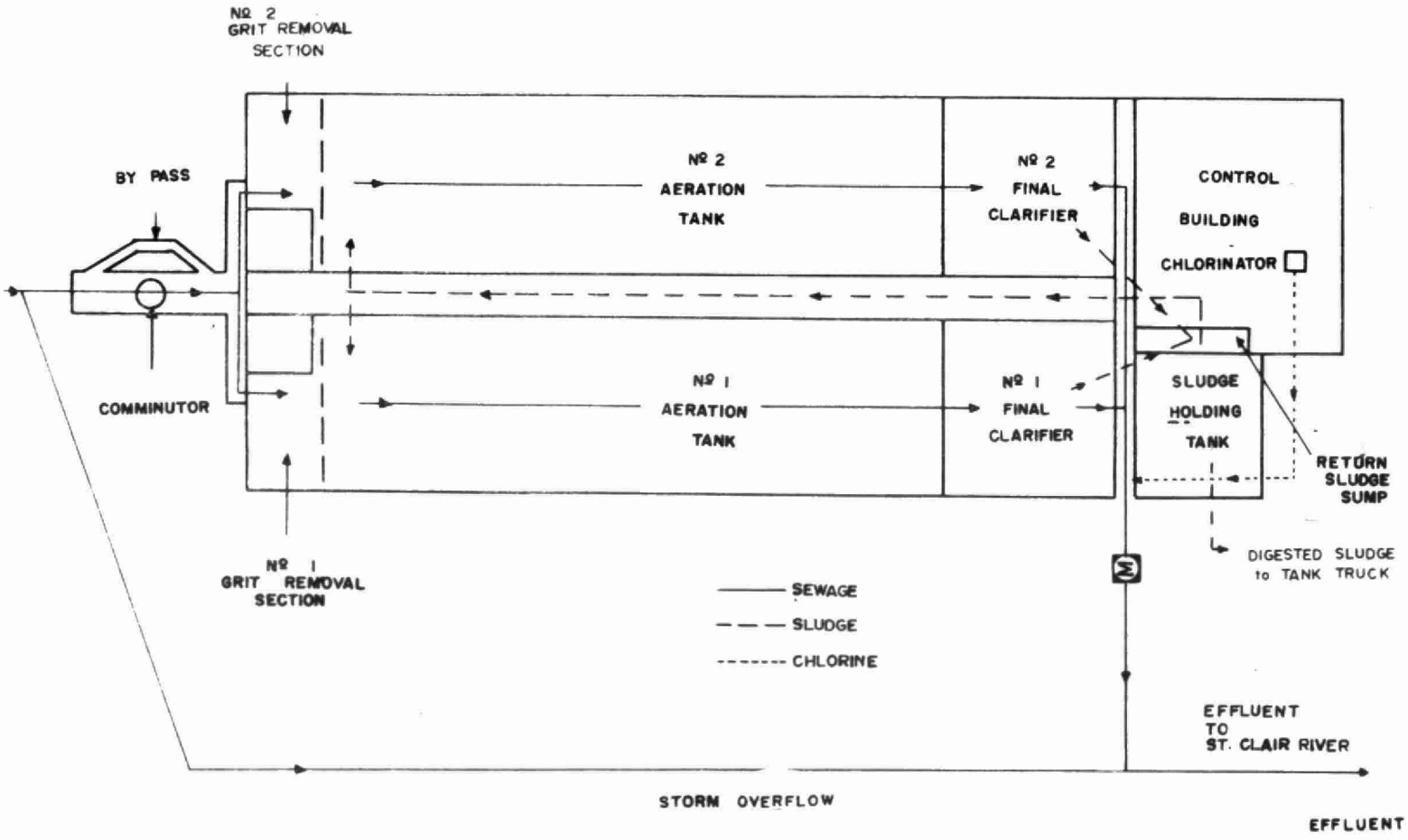


DESIGN DATA

PROJECT	Moore Twp. (Corunna) WPCP
PROJECT NO.	2-0088-61
TREATMENT	Extended Aeration
DESIGN FLOW	0.32 mgd
DESIGN POPULATION	4,000
BOD - Raw Sewage	150 mg/l
- Removal	90-95%
SS - Raw Sewage	150 mg/l
- Removal	90-95%

PRETREATMENT

Comminution

Type: Worthington comminutor
Size: One Model 15-C-4

Grit Removal

Type: C.P. Aer-Degritter with air lift
Size: 3780 gal
Retention: 17 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, Single pass
Size: Two 84' x 17' x 14.25' (avg)
(40,698 cu ft or 254,000 gal)
Retention: 24.0 hours

Air Supply

Type: Sutorbilt
Size: Two 1000 cfm

Diffusers

Type: C.P. Spargers
Spacing: 22 per tank @ 20" c-c

Secondary Sedimentation

Type: Dorr
Size: Two 22' x 22' x 12½' swd
(75,300 gal)
Retention: 5.7 hours
Loading: Surface, 330 gal/ft^2/day
Weir, 2,350 gal/ft/day

CHLORINATION

Type: W & T, Manual
Size: One 100 lb/day

Chlorine Contact Chamber

- in outfall

OUTFALL

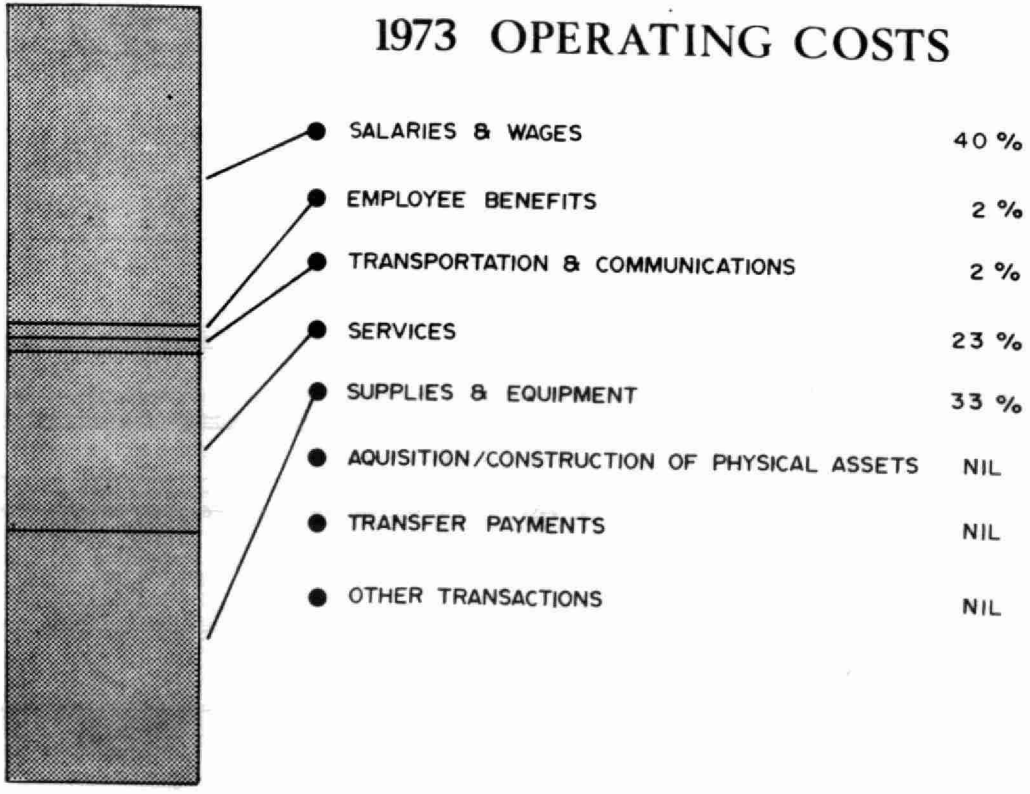
196' of 48" dia corrugated pipe to St. Clair River

SLUDGE HANDLING

Type: Sludge holding tank (decanted)
Size: One 17' x 17' x 15' (23,000 gal @ 12.8' depth)

ANNUAL COSTS

1973 OPERATING COSTS



YEARLY OPERATING COSTS

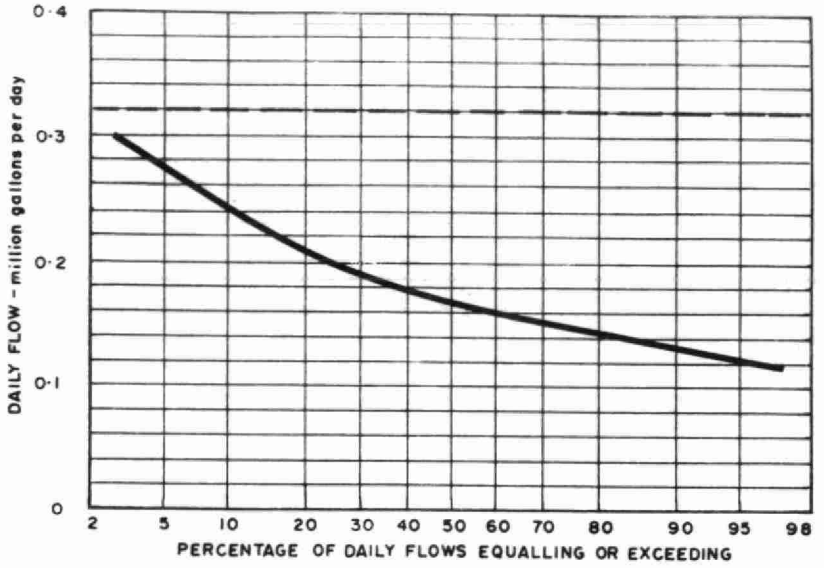
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS $/M.G.	UNIT COSTS ¢/lb BOD
1968	39.9	$ 16,555	415	21
1969	44.8	16,333	364	22
1970	46.3	18,530	401	27
1971	46.0	20,574	447	37
1972	65.7	21,434	319	24
1973	63.6	33,153	520	34

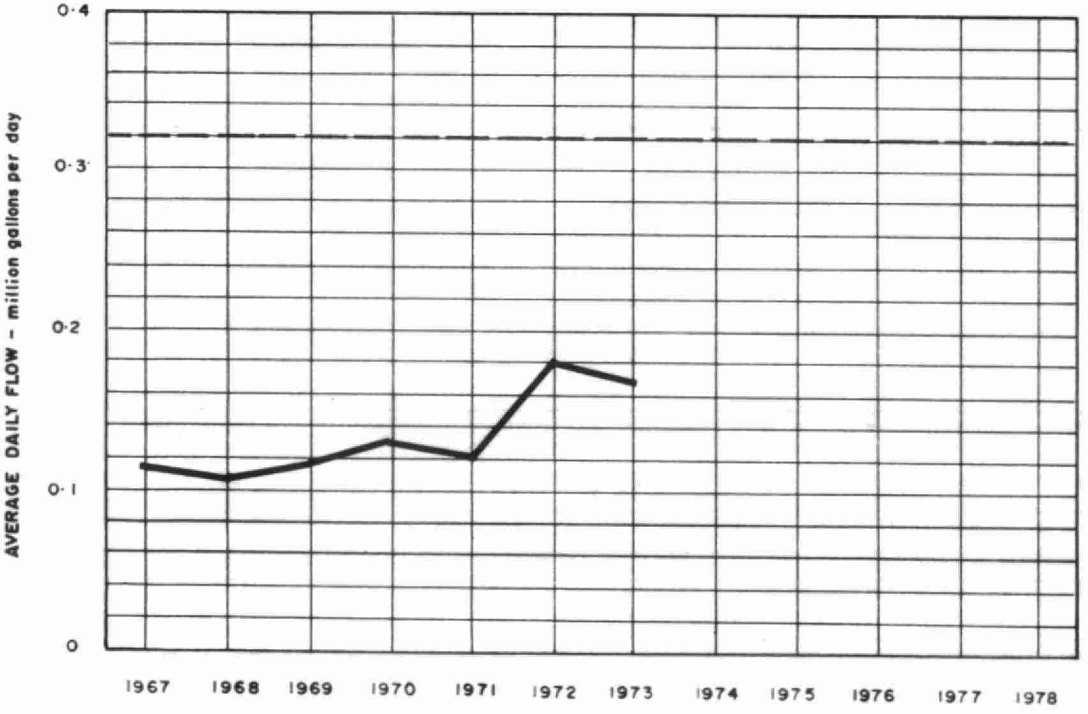
OPERATING EXPENDITURES

SALARIES AND WAGES	$13,288
EMPLOYEE BENEFITS	641
TRANSPORTATION & COMMUNICATIONS	734
SERVICES	7,594
SUPPLIES AND EQUIPMENT	10,896
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	0
TRANSFER PAYMENTS	0
OTHER TRANSACTIONS	0
TOTAL	$33,153

PROCESS DATA

FLOWS



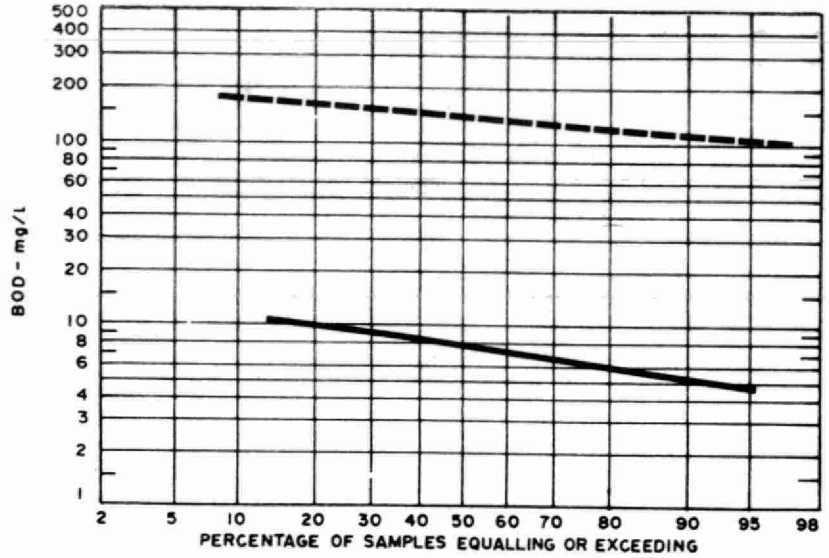


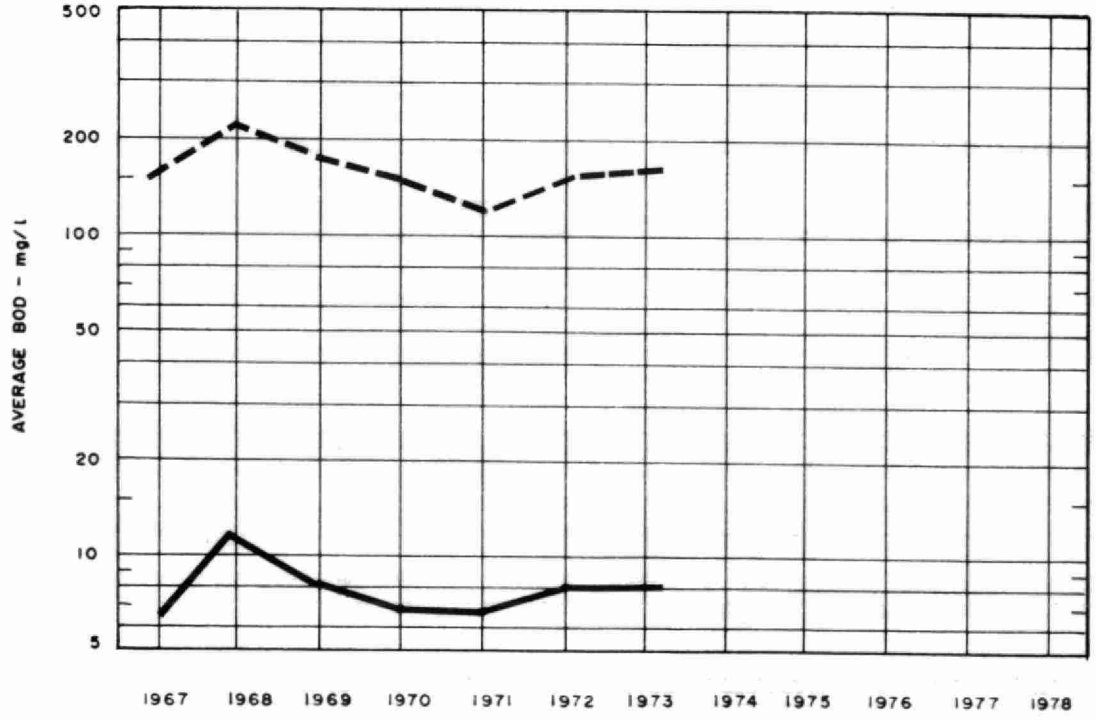
DESIGN CAPACITY _ _ _ _ _ _ _

PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10^3 pounds	mg/l	mg/l	%	10^3 pounds	mg/l P	mg/l P
JAN	6.03	0.19	0.23	147	8	95	8.4	136	9	95	7.7	6.4	4.9
FEB	5.35	0.19	0.26	155	9	94	7.8	148	13	91	7.2		0.8
MAR	7.69	0.25	0.41	152	11	93	10.8	137	15	89	9.4	15.0	1.0
APR	5.11	0.17	0.33	161	6	96	7.9	179	9	95	8.7	7.4	0.5
MAY	5.58	0.18	0.27	158	8	95	8.4	143	9	94	7.5	6.2	3.4
JUNE	4.92	0.16	0.24	211	6	97	10.1	287	7	98	13.8	9.6	1.1
JULY	4.49	0.14	0.24	167	9	95	7.1	144	16	89	5.7	7.2	6.8
AUG	4.30	0.14	0.16	162	9	94	6.6	135	8	94	5.5	7.2	
SEPT	3.88	0.13	0.17	166	7	96	6.2	152	11	93	5.5	7.5	7.3
OCT	4.56	0.15	0.20	153	6	96	6.7	148	6	96	6.5	8.8	5.6
NOV	5.57	0.19	0.33	157	7	96	8.4	160	12	93	8.2	14.0	5.5
DEC	6.21	0.20	0.47	137	7	95	8.1	143	10	93	8.3	9.4	5.1
TOTAL	63.69	-	-	-	-	-	96.5	-	-	-	94.0	-	-
AVG.		0.17	MAXIMUM 0.47	163	8	95	8.0	165	10	93	7.8	9.1	3.2
No. of Samples	-	-	-	65	67	-	-	65	67	-	-	14	14

BIOCHEMICAL OXYGEN DEMAND

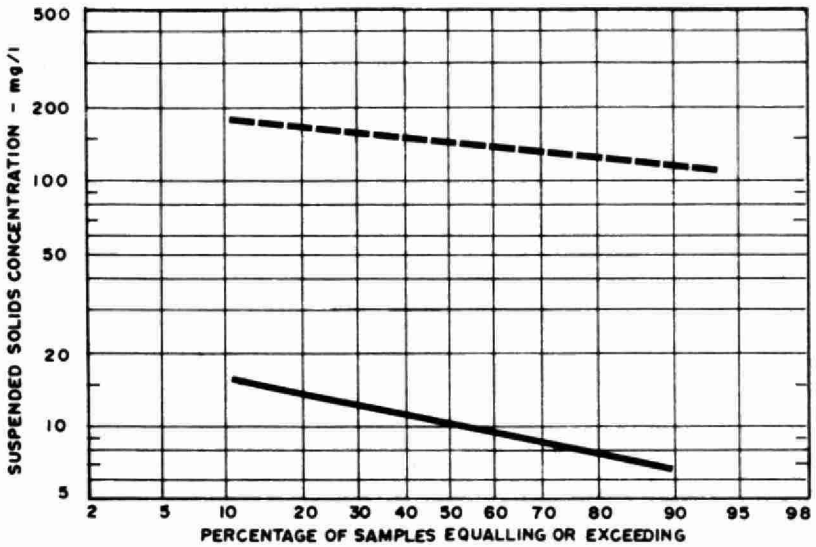


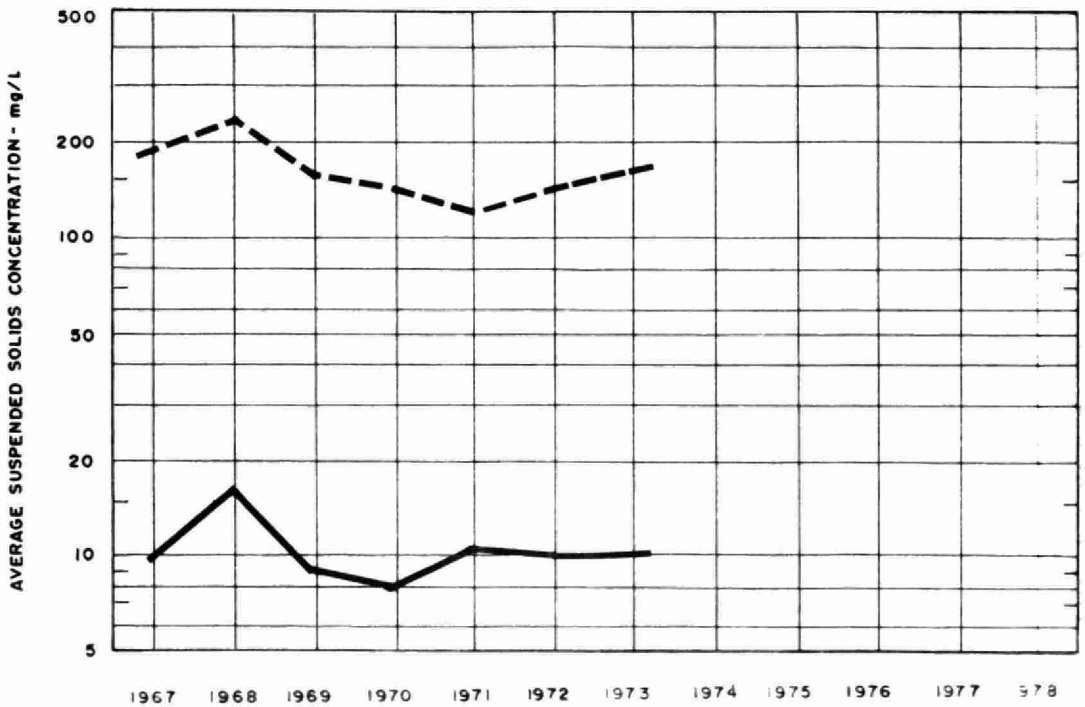


PLANT INFLUENT

PLANT EFFLUENT

SUSPENDED SOLIDS

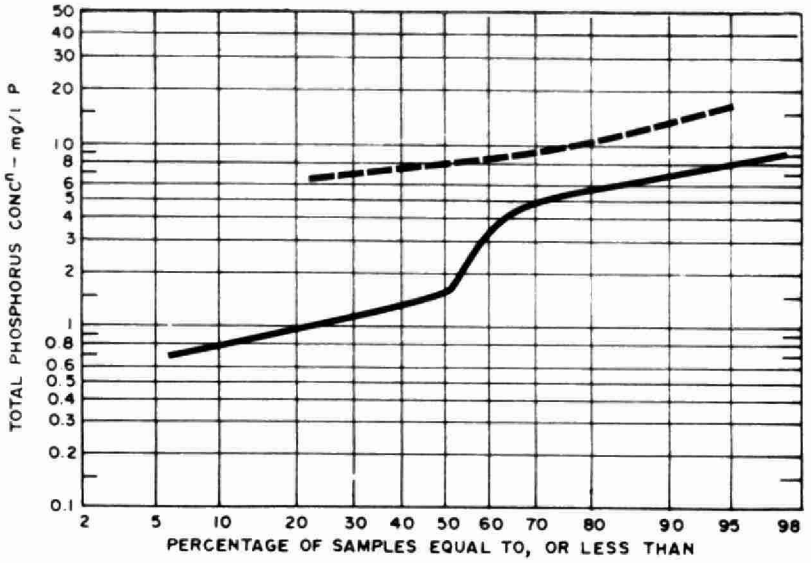


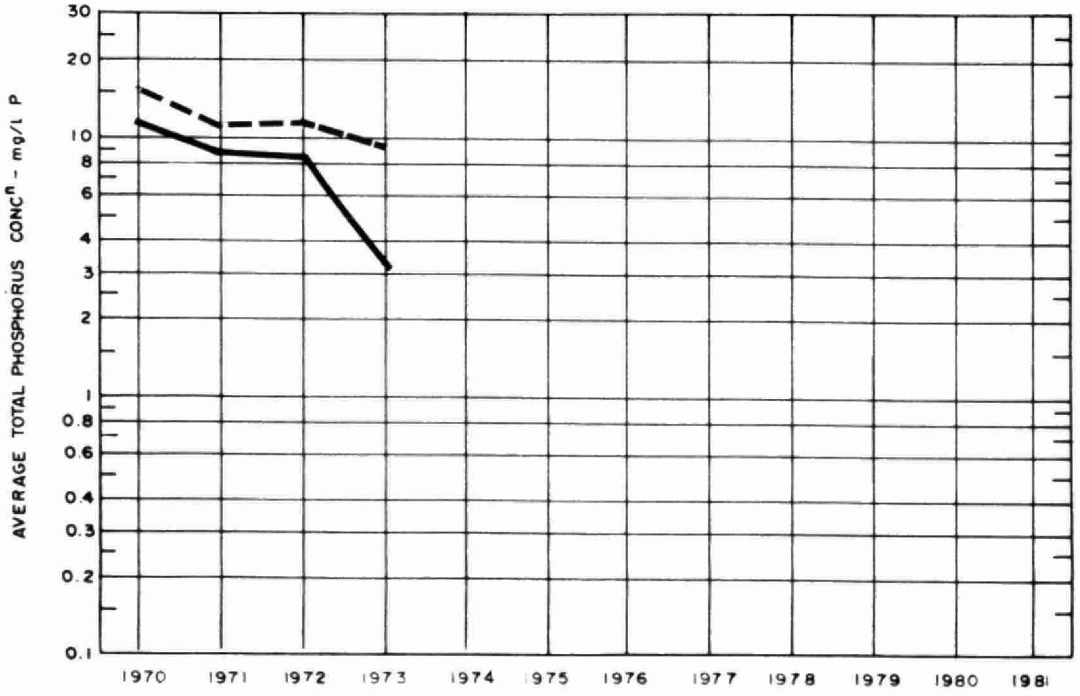


PLANT INFLUENT

PLANT EFFLUENT

PHOSPHORUS





PLANT INFLUENT

PLANT EFFLUENT

TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			AEROBIC DIGESTER			
	QUANTITY REMOVED cubic feet	Cl_2 USED pounds	AVG. DOSAGE mg/l	MLSS CONC mg/l	F/M day^{-1}	AIR USED $\frac{1000\ ft^3}{lb\ BOD}$	QUANTITY 10^3 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	QUANTITY REMOVED 10^3 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	AMOUNT HAULED cubic yards
JAN	15	310	5.2	6270	0.03	5.4	45	11000	68	18.0			107
FEB	13	280	5.3	7370	0.03	5.2	50	11400	64	32.4	3.6	66	192
MAR	23	310	4.0	5880	0.05	4.1	210	14000	56	18.0	3.0	61	107
APR	16	290	5.7	4830	0.04	5.5	100	11900	42	0			0
MAY	18	310	5.6	4940	0.04	5.3	65	12100	54	88.2	3.1	57	523
JUNE	18	300	6.1	5190	0.05	4.4	32	8800	60	13.5			80
JULY	18	310	6.9	4150	0.04	6.5	70	6400	59	18.0	1.3	56	107
AUG	16	310	7.2	3920	0.04	6.7	75	8700	64	24.0	2.9	54	144
SEPT	18	300	7.7	3550	0.09	6.9	30	6200	66	21.0	2.6	59	125
OCT.	18	310	6.7	3930	0.04	6.5	50	7300	71	25.5	1.1	67	152
NOV	18	300	5.4	4190	0.06	5.0	47	5500	70	12.0			70
DEC	16	310	5.0	5000	0.04	5.5	80	11000	39	27.0	1.2	62	160
TOTAL	207	3640	–	–	–	–	854	–	–	297.6	–	–	1767
AVG.	3.2 cu. ft/mil gal	10	5.7	4940	0.05	5.6	71.2	9520	59	27.1	2.3	60	161